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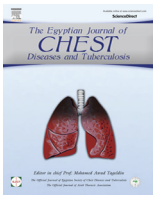

Study of smoking habit among soldiers in Cairo Security Forces Hospital

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ABSTRACT

Background: Smoking in Egypt is prevalent as 19 billion cigarettes are smoked annually in the country making it the largest market in the Arab world. In the past few years smoking in Egypt has reached an all-time high with an estimated twenty percent as fifteen million people regularly using tobacco products. Nearly forty percent of all men in Egypt smoke. The percentage of the population using any tobacco product elevated to around 23% among the productive age group 25–44 and the prevalence of using any tobacco product among all university graduates is about 16%.

Aim of the work: This work aimed to study the smoking habit and its effects among soldiers in Cairo Security Forces Hospital and their trend to quit.

Patients and methods: The study was conducted on patients attending the outpatient clinic in Cairo Security Forces Hospital in a period from June 2014 to December 2014. All patients were subjected to Full history taking, Clinical examination, Smoking questionnaire, and Chest X-ray for patients complaining of respiratory symptoms.

Results: The sample number was 1100 subjects' males' soldiers cigarette smokers aged 19–23 years old. The majority of them (96.91%) smoke daily, there was highly statistical difference in number of cigarettes smoked per day with the majority (54.45%) smoke a pack to pack and half of cigarettes, also there was high statistical difference of current smokers (96.73%) and ex-smokers(3.27%) with the majority (80.55%)start smoking between the age 15 to less than 20 years old .The main cause of initiation of smoking was due to friends and social reasons and there was high significance that they smoke for the first in the day at morning with highly statistical difference that they smoke all over the day than during morning with the majority (91.45%) accept smoking as it is not a harmful habit.

Most soldiers have moderate levels of craving to smoke, (51.91%) of soldiers don't stop smoking inspite of their illness, (55%) of the group sample like smoking mainly to relieve tension, and (51.91%) to avoid problems like getting irritable or gaining weight.

Expectoration is the main complain followed by frequent coughing then shortness of breath .As regard systemic symptoms; gastrointestinal symptoms in the form of heart burn and oral cavity problems are the most common encountered symptoms. The majority of soldiers (99.82%) would quit smoke because of serious illness, also (99.55%) didn't give up or greatly reduced any important activity such as sports gathering with relatives or friends,(90.73%) of sample group didn't advice other to quit smoking.

Although (59.64%) of soldiers thought about quitting smoking, yet (95.09%) of them never tried to quit while, only (4.91%) tried to quit, (74.07%) of whom, tried less than three times, (68.52%) quitted smoking for less than one month. Also the majority of soldiers who tried to quit (88.89%) found it is difficult to quit with (61.11%) of them answered that the last try to quit smoking was more than one year ago. The majority of soldiers (85.18%) tried to quit smoking to improve health followed by suffering of the high cost of smoking.

Health concern was the most useful way of quitting smoking in (57.4%) of soldiers who tried to quit followed by seeking good lifestyle, while (42.59%) hadn't received any positive support during the quitting process.

Soldiers who tried to quit found that there is problems that occurred in the first two days of quitting were craving (92.59%), headache (88.89%), getting irritable or angry (81.48%), palpitation (74.07%), trouble concentration (57.41%). Most of soldiers who tried to quit (66.67%) found that they could quit while (33.33%) couldn't quit with the majority of them (77.78%) found that the first cigarette in the morning is the most hated one to give up, (61.11%) resume smoking due to cigarette craving,(38.89%) due to stress/tension.

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The majority of all soldiers (95.73%) prefer the plain packs than the discouragable pictured packs. Most of soldiers (71.73%) spent about 5–10 L.E per day on cigarettes. Most symptomatized soldier smokers had no chest X-ray abnormality (81.03%) while in minority of smokers (18.97%) showed increase in broncho-vascular markings.

Conclusions: Cigarette smoking is a common habit among soldiers and it starts in a relatively young age mainly due to social influence. Respiratory and gastrointestinal symptoms are the most frequent encountered complaints among soldiers. Main causes that led them to try quitting were health concerns and financial issues; as most of them spend a considerable percentage of their monthly income to obtain cigarettes. Unfortunately there was no organized positive support to help the quitters.

Introduction

Tobacco smoke is a dynamic, complex and reactive mixture containing an estimated 5000 chemicals. This toxic and carcinogenic mixture is probably the most significant source of toxic chemical exposure and chemically mediated disease in humans [1].

Smoking in Egypt is prevalent as 19 billion cigarettes are smoked annually in the country making it the largest market in the Arab world. In the past few years smoking in Egypt has reached an all-time high with an estimated twenty percent as fifteen million people regularly using tobacco products. Nearly forty percent of all men in Egypt smoke. The percentage of the population using any tobacco product elevated to around 23% among the productive age group 25–44 and the prevalence of using any tobacco product among all university graduates is about 16% [2].

According to WHO estimated that 5.4 million premature deaths are attributable to tobacco smoking worldwide .If current trends continue about 10 million smokers per year are anticipated to die by 2025 [3].

Questionnaires distributed to patients as they attend doctors are frequently used in primary care studies with behavioral outcomes. In particular such data collection methods have been employed in trials of smoking cessation or health promotion interventions and in some studies investigating the impact of training physicians in smoking cessation methods on doctors' clinical behavior and patients' smoking. Post-consultation questionnaires are known to over-estimate rates of smoking cessation advice given by general practitioners and hospital physicians [4].

On chest radiography, Cigarette smoking-induced airway disease commonly results in an overall increase of non-specific lung markings. This has been described as "dirty chest". Only a small number of smokers show normal lung parenchyma. Cigarette smoking results in respiratory bronchiolitis-associated interstitial lung disease (RB-ILD).The most common finding of RB-ILD on chest radiography is the thickening of the walls of the central or peripheral bronchi which is seen in about 75% of the patients. A reticulonodular pattern was found in the chest radiographs and ground-glass opacities in patients with histologically proven RB-ILD. There is a linear correlation between the extent of cigarette smoking and an increase of overall lung markings on chest radiography [5].

In a survey conducted by the World Health Organization they found that among every day smokers 16.6% had quit smoking. Of the people who quit smoking over the past twelve months 41.1% had made a trial to quit and 17.9% actually proved successful in quitting. Of the current population of smokers 42.8% expressed interest in quitting smoking. Of the 41.1% that tried to quit over the past twelve months, only 2.0% used pharmacotherapy and 4.0% used cessation counseling [2].

Patients and methods

This study will be conducted on patients attending the outpatient clinic in Cairo Security Forces Hospital in a period from June 2014 to December 2014. All patients will be subjected to the following:

1- Full history taking.
2- Clinical examination.
3- Smoking questionnaire.
4- Chest X-ray for patients with respiratory symptoms.
5- All data will be calculated, tabulated and statistically analysed.

Smoking questionnaire [5]

Age Type of smoking
1-How acceptable is smoking for you?
2-Do you usually smoke every day?
Yes No
3-How many cigarettes do you smoke per day?
4-Which of the following categories describes your smoking?
a. Ex-smoker
b. Current smoker
5-How old were you when you started smoking?
6-What was your main reason for initiation of smoking?
a. Stimulation
b. Relaxation/enjoyment
c. Stress/tension
d. Habit/activity
e. Friends/social
f. Other

7-When do you smoke for the first time in the day?
8-Do you smoke more during the morning than during the rest of the day?
Yes No
9-How do you rate your current level of craving?
Low moderate high
10-Do you smoke if you are so ill that you are in bed most of the day?
Yes No
11-What do you like about smoking?
12-Do you keep smoking to avoid problems like getting irritable or gaining weight?
Yes No
13-Did smoking cause you any of these problems?
(More than one answer can be selected)
a. Frequent coughing
b. Expectoration
c. Shortness of breath
d. Wheezes
e. Haemoptysis
f. Pain or tightness of the chest
14-Did smoking cause you any of the following symptoms?
(More than one answer can be selected)
a. Neurological
b. Cardiac
c. Leg claudications
d. Gastrointestinal
e. Other systems

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15-Have you continued smoking in spite of a serious illness that deserves quitting smoking?
Yes No
16-Have you given up or greatly reduced any important activity in order to smoke such as sports, work, associating with relatives or friends?
Yes No
17-Have you ever advised others not to smoke?
Yes No
18-Are you seriously thinking about quitting smoking?
Yes Probably No
19-Have you ever tried to quit smoking?
Yes No
a. How many times?
b. What is the longest time you have stopped smoking for?
c. Was it difficult or easy?

20-When did you last try to quit smoking?
21-Why did you tried to quit smoking?
(More than one answer can be selected)
a. Improve health
b. break habit
c. Cost of smoking
d. Fear of unacceptable image
e. Preserve fitness
f. Social pressures
g. Children health
h. Other

22-The last time you quit, what were the useful ways helped you to quit?
(More than one answer can be selected)
a. I told myself I could quit.
b. I thought about soaking's effect on my health.
c. I talked about my smoking with my family.
d. I distracted myself with other activities.
e. I thought about my dependence on cigarettes.
f. I thought about how my life would be better without smoking.

23-On the last occasion you quit, what level of support did you receive from others?
a. None
b. Minimal
c. Moderate
d. Lots of positive support

24-Now I am going to ask you about some problems you might have had in the first or second day after you quit:
a. Did you crave a cigarette? Yes No
b. Were you irritable or angry? Yes No
c. Did you have trouble concentrating? Yes No
d. Did you have headaches? Yes No
e. Were you drowsy? Yes No
f. Did you have an upset stomach? Yes No
g. Did you feel palpitation? Yes No
h. Did your appetite increase or did you gain weight? Yes No
e. Did your hands shake? Yes No
f. Did you feel depressed? Yes No
25-Did you find you could quit? Yes No
26-Which cigarette would you hate to give up?
a. First in the morning
b. After a hot drink
c. After a meal
d. When craving
e. Other
27-Why did you resume smoking?
(More than one answer can be selected)
a. Craving
b. Stimulation
c. Relaxation/enjoyment
d. Stress/tension
e. Habit/activity
f. Friends/social
g. Lack of will power

28-Do you agree with selling cigarettes in plain packs showing only the brand name and health warning or in the current packs with discouragable pictures?

*Plain packs * Discouragable pictured packs

Results

The mean age of participants is 21.03 years (SD ± 0.92) with ages ranging from 19 to 23 years (See Table 1).

There is a highly significant statistical difference (P value < 0.001) between soldiers who smoke cigarettes and soldiers who don't smoke the majority of soldiers in Cairo Security Forces Hospital (96.91%) are smokers (See Table 2).

There is a highly significant statistical difference (P value < 0.001) in number of cigarettes smoked per day with the majority (54.45%) smoke 20–<30 cigarettes every day (See Table 3).

There is a highly significant statistical difference (P value < 0.001) between current &ex-smokers in the study group with a high percentage of soldiers in Cairo Security Forces (96.73%) are current smokers (See Table 4).

There is a highly significant statistical result (P value < 0.001) in age of starting smoking with most soldiers started to smoke between the age of 15 to less than 20 years old (See Table 5).

The main causes of initiation of smoking are in descending order: friends/ social, stress/tension, habit/activity/ stimulation and others in the form of experiencing new things and celebrations (See Table 6).

There is a highly significant statistical difference in the first time of smoke in the day of the studied group with most of soldiers smoke in the morning (69.91%) (See Table 7).

There is a significant statistical difference (P value < 0.001) between rate of smoking during morning and the rest of the day

Table 1
Age distribution of the study group.

Age (years)	No.	%
From 19 to 20 years	353	32.09
From 21 to 23 years	747	67.91
Total	1100	100.00
Range [Mean ± SD]	19–23 [21.03 ± 0.92]	

Table 2
Daily smoking of soldiers.

1-Do you usually Smoke every Day	No.	%
Yes	1066	96.91
No	34	3.09
Total	1100	100.00
p-value*	<0.001 (HS)	

Table 3
Number of daily smoked cigarettes of the study group.

2-How many cigarettes do you smoke per day	No.	%
<10 cigarettes	73	6.64
10–<20 cigarettes	316	28.73
20–<30 cigarettes	599	54.45
30–40 cigarettes	112	10.18
Total	1100	100.00
p-value*	<0.001 (HS)	

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Table 4
Categories of smoking distribution of the study group.

3-Which of the following categories describe your smoking	No.	%
Ex-Smoker	36	3.27
Current Smoker	1064	96.73
Total	1100	100.00
p-value*	<0.001 (HS)	

Table 5
Age (in years) of starting smoking.

4-How old were you when you started smoking (years)	No.	%
<15 years	13	1.18
15–<20 years	886	80.55
⩾20 years	201	18.27
Total	1100	100.00
p-value*	<0.001 (HS)	

Table 6
Main reason for initiation of smoking in the study group.

5-What was your main reason for initiation of smoking	No.	%
Stimulation	75	6.81
Relaxation/ enjoyment	127	11.54
Stress/ tension	289	26.27
Habit/ activity	216	19.63
Friends/ social	363	33
Others	30	2.72
Total	1100	100.00

Table 7
First time of smoke in the day in the study group.

6-When do you smoke for the first time in the day	No.	%
Morning	769	69.91
After lunch	140	12.73
Any time	5	0.45
At night	184	16.73
Friends gathering	2	0.18
Total	1100	100.00
p-value*	<0.001 (HS)	

Table 8
Period of most smoking during the day in the study group.

7-Do you smoke more during the morning than during the rest of the day	No.	%
Yes	481	43.73
No	619	56.27
Total	1100	100.00
p-value*	<0.005 (S)	

Table 9
Acceptance of smoking as a behavior in the study group.

8-How acceptable is smoking for you	No.	%
Acceptable	94	8.55
Harmful	1006	91.45
Total	1100	100.00
p-value*	<0.001 (HS)	

with most of the studied group showing that they smoke all over the day (See Table 8).

There is a highly significant statistical difference (P value < 0.001) between soldiers who accept smoking and those who don't accept it with 91.45% of soldiers see smoking as a harmful process (See Table 9).

Table 10
levels of craving among soldiers of the study group.

9-How do you rate your current level of craving	No.	%
Low	243	22.09
Moderate	615	55.91
High	242	22.00
Total	1100	100.00
p-value*	<0.001 (HS)	

Table 11
Smoking inspite of illness in the study group.

10-Do you smoke if you are so ill that you are in bed most of the day	No.	%
Yes	529	48.09
No	571	51.91
Total	1100	100.00
p-value*	0.083 (NS)	

Table 12
Reasons to like smoking in the study group.

11-What do you like about smoking	No.	%
Decreased tension	605	55.00
Friend gathering	219	19.91
Increase concentration	156	14.18
Cigarette hold	52	4.73
Good taste	49	4.45
Decreased appetite	18	1.64
After launch	1	0.09
Total	1100	100.00
p-value*	<0.001 (HS)	

Table 13
Keeping smoking for avoidance of certain problems in the study group.

12-Do you keep smoking to avoid problems like getting irritable or gaining weight	No.	%
Yes	571	51.91
No	529	48.09
Total	1100	100.00
p-value*	0.083 (NS)	

Table 14
Chest symptoms among smokers of the study group.

13-Did smoking cause you any of these problems (more than 1 answer could be chosen)	No.	%
Frequent Coughing	35	3.18
Expectorations	1066	96.9
Shortening of breath	17	1.54
Wheezes	6	0.54
Hemoptysis	0	0.00
Pain/Tightness of the chest	0	0.00
p-value*	<0.001 (HS)	

Most soldiers of the sample group have moderate levels of craving to smoke (See Table 10).

There is no significant statistical difference (P value > 0.05)in soldiers who stop smoking if they are so ill and those who don't, with most soldiers don't stop smoking in spite of their illness (See Table 11).

There is a highly significant statistical difference (P value < 0.001) in causes of smoking among the study group with most soldiers like smoking mainly to relieve tension, then due to friend gathering, then to increase their concentration (See Table 12).

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Table 15
Systemic manifestations in smokers in the study group.

14-Did smoking cause you any of the following symptoms (more than 1 answer can be selected)	No.	%
Neurological	3	0.27
Cardiac (Palpitation)	495	45.00
Leg claudications	156	14.18
Gastrointestinal (Heart burn and oral cavity problems)	666	60.55
Other systems	0	0
p-value*	<0.001 (HS)	

There is no significant statistical difference (P value > 0.05) between soldiers who keep smoking to avoid irritability or gaining weight and those who don't (See Table 13).

There is a highly significant statistical difference (P value < 0.001) as regards respiratory problems among smoker soldiers which is most soldiers reported expectoration (See Table 14).

There is a highly significant statistical difference (P value < 0.001) in systemic symptoms appearing in the study group with gastrointestinal symptoms in the form of heart burn and oral cavity problems are the most common encountered symptoms (See Table 15).

There is a highly significant statistical difference between soldiers who have continued smoking inspite of illness that deserved to quit smoking and those who haven't (P < 0.001), with most soldiers stopped smoking because of this serious illness (See Table 16).

There is a highly significant statistical difference between soldiers who have given up activities because of smoking and soldiers who haven't (P < 0.001), with most soldiers didn't give up activities because of smoking (See Table 17).

There is a highly significant statistical difference (P value < 0.001) between soldiers who have advised others not to smoke and those who haven't, with most soldiers have not advised others to quit smoking (See Table 18).

There is a highly significant statistical difference (P value < 0.001) in soldiers who don't think of quitting smoking and those who think of it, with 57% of soldiers don't think about quitting (See Table 19).

Table 16
Continuing of smoking in the study group inspite of illness.

15-Have you continued smoking inspite of illness that deserves quitting smoking	No.	%
Yes	2	0.18
No	1098	99.82
Total	1100	100.0
p-value*	<0.001 (HS)	

Table 17
Effect of smoking on other activities of the study group.

16-Have you given up or greatly reduced any important activity in order to smoke such as sports, work, associating with relatives or friends	No.	%
Yes	5	0.45
No	1095	99.55
Total	1100	100.0
p-value*	<0.001 (HS)	

Table 18
Advising other persons to quit smoking.

17-Have you ever advised others not to smoke	No.	%
Yes	102	9.27
No	998	90.73
Total	1100	100.0
p-value*	<0.001 (HS)	

Table 19
Serious thinking of quitting smoking in the study group.

18-Are you seriously thinking about quitting smoking	No.	%
Yes	441	40.09
Probably	3	0.27
No	656	59.64
Total	1100	100.0
p-value*	<0.001 (HS)	

Table 20
Trials of quitting smoking in the study group.

19-Have you ever tried to quit smoking, If your answer is Yes	No.	%	p-value
Easy	6/54	11.11	
Have you ever tried to quit smoking			
Yes	54	4.91	<0.001 (HS)
No	1046	95.09	
How many times			
<3 times	40/54	74.07	<0.001 (HS)
⩾3 times	14/54	25.93	
The longest stop duration (months)			
<1 month	37/54	68.52	<0.001 (HS)
⩾1 month	17/54	31.48	
Difficult or easy to stop			
Difficult	48/54	88.89	<0.001 (HS)

Table 21
Duration (in years) of last trial of quitting smoking in the study group.

20-When did you last try to quit smoking (years)	No.	%
<1 years	21	38.89
⩾1 years	33	61.11
Total number of soldiers who tried to quit	54	100.0
p-value*	<0.001 (HS)	

- There is a highly significant statistical difference (P value < 0.001) between soldiers who have tried to quit smoking and those who haven't, with most soldiers have not tried to quit smoking.
- Number of trials of quitting smoking: most soldiers who have tried to quit smoking tried it less than 3 times with a highly significant statistical difference.
- The longest period of smoking quitting: (68.52%) of soldiers who tried to quit smoking was less than 1 month with a highly significant statistical difference.
- Was it easy or difficult to stop smoking: There is highly significant statistical difference with (88.89%) of soldiers found it was difficult to quit.

There is highly statistical difference (P value < 0.001) between soldiers who last tried to quit smoking for more than a year and less than one year with 61.11% of soldiers were last tried to quit smoking since more than one year (See Tables 20 and 21).

The main causes of quitting trials of smoking in the study group were to improve health followed by high cost of smoking then children health (See Table 22).

Health concern was the most useful way of quitting smoking followed by seeking good life quality (See Table 23).

There is a significant statistical difference (P value 0.012) between levels of received support among the study during last occasion of quitting smoking with most soldiers have not received any positive support (See Table 24).

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Table 22
Causes of trials of quitting smoking in the study group.

21-Why did you try to quit smoking (more than one answer can be selected)	No.	%
Improve health	46	85.18
Break habit	0	0.00
Cost of smoking	33	61.1
Fear of unacceptable image	0	0.00
Preserve fitness	0	0.00
Social pressures	1	1.85
Children health	10	18.51
Total number of soldiers who tried to quit	54	100

Table 23
The useful ways to quit smoking distribution in the study group.

22-If the answer of question Number 19 is yes, what were the useful ways helped you to quit (more than one answer can be selected)	No.	%
I told myself I could quit	11	20.3
I thought about smoking's effect on my health	31	57.4
I talked about my smoking with my family	5	9.25
I distracted myself with other activities	0	0.00
I thought about my dependence on cigarettes	3	5.55
I thought about how my life would be better without smoking	25	46.2
I sought medical advice	0	0.00
Total number of soldiers who tried to quit	54	100

Table 24
Levels of received support from others on the last occasion of quitting smoking among the study group.

23-If the answer of question number 19 is yes, what level of support did you receive from others	No.	%
None	23	42.59
Minimal	7	12.96
Moderate	16	29.63
Lots of positive support	8	14.81
No. of sample (who tried to quit)	54	100.0
p-value*	0.012 (S)	

Table 25
Problems occurred during smoking quitting in the study group.

24-If the answer of question number 19 is yes now I am going to ask you about some problems you might have had in the first or second day after you quit	Yes (No.)	%
Did you crave a cigarette	50	92.59
Where you irritable or angry	44	81.48
Did you have headache	48	88.89
Where you drowsy	29	53.70
Did you have an upset stomach	7	12.96
Did you feel palpitation	40	74.07
Did your appetite increase or did you gain weight	2	3.70
Did your hands shake	3	5.56
Did you have trouble concentration	31	57.41
Did you feel depressed	0	0.00
Total number of soldiers who tried to quit	54	100.00
p-value*	<0.001 (HS)	

Table 26
Success of quitting smoking trials in the study group.

25-If the answer to question number 19 is yes did you find you could quit	No.	%
Yes	36	66.67
No	18	33.33
No. of sample (who tried to quit)	54	100.00
p-value*	<0.001 (HS)	

Table 27
The most difficult cigarette to give up in the study group.

26-If the answer of question number 19 is yes which cigarette would you hate to give up	No.	%
First in the morning	42	77.78
After a hot drink	2	3.70
After a meal	10	18.52
When craving	0	0.00
Other	0	0
No. of sample (who tried to quit)	54	100.0
p-value*	<0.001 (HS)	

Table 28
Causes of resuming smoking after quitting trials in the study group.

27-Why did you resume smoking (more than one answer can be selected)	No.	%
Craving	33	61.11
Stimulation	0	0.00
Relaxation/Enjoyment	0	0.00
Stress/tension	21	38.89
Habit/Activity	18	33.33
Friends/Social	13	24.07
Lack of will power	6	11.11
No. of sample (who tried to quit)	54	100.00
p-value*	<0.001 (HS)	

Table 29
Opinions of soldiers of the study group about shapes of cigarette packs.

28-Do you agree with selling cigarettes in plain packs showing only the brand name and health warning or in the current packs with discouragable pictures	No.	%
Plain packs	1053	95.73
Discouragable pictured packs	47	4.27
Total	1100	100.00
p-value*	<0.001 (HS)	

Table 30
The daily cost of cigarettes distribution in the study group.

29-How much money does it cost you per day to smoke? (L.E.)	No.	%
<5 L.E	238	21.64
5–10 L.E	789	71.73
>10 L.E	73	6.64
Total	1100	100.0
p-value*	<0.001 (HS)	

There is a highly significant statistical difference (P value < 0.001)in problems occurred in first two days of quitting smoking with the commonest problems occurred during smoking quitting were craving, headache, irritability, palpitation, then trouble concentrating (See Table 25).

In the soldiers who tried to quit smoking, there is a highly significant statistical difference between soldiers who could quit smoking (66.67%) and soldiers who didn't succeeded in smoking quitting (33.33) (See Table 26).

In the group who tried to quit smoking, the first cigarette in the morning is the most hated one to give up with a highly significant statistical difference (See Table 27).

There is a highly significant statistical difference (P value < 0.001) in the causes of resuming smoking after quitting trials with the most common cause of resuming smoking is cigarette craving (See Table 28).

There is a highly significant statistical difference (P value < 0.001) between soldiers who prefer plain packs and those who prefer pictured/warning packs with most of them preferring the plain packs (See Table 29).

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Table 31
Relation between the daily smoking cost and the salary.

Salary	How much money does it cost you per day to smoke? (L.E.)			*t*-test	
	Mean	±SD	Diff.%	t	p-value*
⩽200 L.E	7.68	2.68	28.02%	27.866	<0.001
>200 L.E	12.51	4.11	53.18%		HS
Total Mean of salary [212.5 ± 20]	10.01	3.39	41.32%		

Table 32
Chest X-ray abnormalities in symptomatizing soldier smokers of the study group.

Chest X-Ray Abnormalities	No.	%
No Abnormality	47	81.03
Abnormality	11	18.97
Total (X-Rays)	58	100.00
p-value*	<0.001 (HS)	

There is a highly significant statistical difference (P value < 0.001) in the daily cost of cigarettes distribution in the study group with the majority of soldier smokers spend about 5–10 L.E per day on cigarettes (See Table 30).

There is a significant difference between the daily smoking cost in soldiers with monthly payment less than 200 L.E and > 200 L.E with more daily smoking cost association with more salary (>200 L.E monthly payment) (See Table 31)

Most symptomatized soldier smokers had no abnormalities on their chest x rays, in minority of smokers, x rays showed increased bronchovascular markings (See Table 32).

Discussion

Tobacco use is one of the biggest public health threats the world has ever faced. Tobacco users who die prematurely deprive their families of income, raise the cost of healthcare, and hinder economic development [6]. Tobacco smoking is the leading cause of preventable death in the world. Currently, smoking is responsible for 5 million deaths annually leading to increase the absolute number of deaths from lung cancer, chronic bronchitis, emphysema and cor-pulmonale [7].

Soldiers were the focus of this survey as the attitude and practice towards tobacco smoking of this critical job could influence their ability to achieve good performance in work and their smoking habits during this young age could affect their future health. Also, they represent a sample of low socio-economic class population with low salaries and low education levels. Moreover, studies have found that the nature of their job as service members may have an influence on their smoking habits [8].

The sample number was 1100 males soldiers of cigarette smokers aged 19–23 years old attending the outpatient clinic at the Cairo Security Forces Hospital in the period from June 2014 to December 2014. In the current study, all smokers were males; this was mainly due to the nature of the job selected for the survey. They aged between 19 to 23 years old according to their elapsed time in service.

In the current study, there was a highly significant statistical difference between soldiers who smoked daily (96.91%) and those who didn't (3.09) .This indicates the effect of continuous pressure and stress on soldiers and also indicates that the being knowledgeable about the health-related negative consequences of smoking is not enough to encourage behavior changes. This result resembled that obtained by Toljamo et al. [9] who studied smoking habits among 614 military recruits starting their military service in the Light Infantry Brigade and Lapland Antiaircraft Regiment, part of the Northern Command of the Finnish Defense Forces, from the autumn of 2008 till the spring of 2009 and found that 85.2% were daily smokers.

In the current study, (64.63%) soldiers were heavy smokers, smoking >20 cigarettes/day. This result might be due to their young age usually with impulsive character, wrong beliefs in the power of smoking and group encouraging. That result resembled, but somewhat higher than that found by Campus et al. [10] who studied smoking habit among 763 Italian adults attending a Military Academy to clarify if smoking habit increases the dental caries and found that (57.2%) were heavy smokers.

In the current study, there was a highly significant statistical difference as regards state of smoking among soldiers, with higher percentage of current cigarette smoking (96.73%) and lower percentage of ex-smoking (3.27%). This indicated that cigarette usage was more practical and suitable for the life style of the soldiers as many of them used to smoke before getting in the job or during it to increase their concentration, in other words, cigarettes represent a dear friend to them when they need it and where they need it. This result reflected the high percentage of soldiers who haven't tried to quit smoking. Despite the wide difference of number of subjects included in the study, these results resembled the results of Gierisch et al. [11] who studied smoking habit among 20 participants at The Durham Veterans Affairs Medical Center for Iraq- and Afghanistan-era veterans, who found that most of them were current smokers. These results were higher than those found by Al-Khashan et al. [12] as this work was part of a national study surveying chronic diseases and their risk factors among military personnel in the five military regions of KSA: Eastern, Western, Northern, Southern, and Central. They studied smoking habits in 10,229 soldiers and found that (35%) of the participants were current smokers; may be because The Kingdom of Saudi Arabia is a country where smoking is considered socially undesirable for religious and cultural reasons. Also, the results were higher than those stated by Cunradi et al. [13] whose study was done among active duty U.S Navy careerist, the Participants in the study were 2922 and found that (38%) of them were current smokers. Also, Tekbas et al. [14] studied 1088 soldiers in Turkey and found that (63.7%) were current smokers. This indicates that the Tobacco control programs in Egypt need to direct their attention to this group of the society to encourage them to quit smoking.

In the current study, (80.55%) started to smoke between the age of 15 and less than 20 years old, (18.27%) started at age of or more than 20 years and (1.18%) started at age less than 15 years. These results matched to some extent those found by U.S. Public Health Service [15] who reported that 88% of all first time cigarette use occurred before the age of 18 years.

These results suggest that gaining financial independence or the factor of being distant from one's family have an influence on starting smoking. Moreover, the job factor may have influence on initiating smoking with more group gatherings and individuals being encouraging each other with their convince that the stress of the job and their multiple task stress will be relieved by smoking. Those who had started smoking in late childhood reported that it may be due to more exposure to both parents and friends who smoked.

In the current study, the main factors of initiation of smoking were friends/social in three hundred sixty-three soldiers (33%), then stress/tension in two hundred eighty-nine soldiers (26.27%), followed by habit/ activity in two hundred and sixteen soldiers (19.63%), then relaxation/ enjoyment in one hundred twenty-seven soldiers (11.54%). These results resembled those obtained by Hussain et al. [16] who studied prevalence of cigarette smoking and the knowledge of its health implications among 853 Nigerian

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soldiers using a questionnaire, and found that (34.1%) of the current smokers identified "friends" as their source of first cigarette, derivation of pleasure and relaxation constituted (24.9%) and alleviating anxiety (21.4%) were the 2nd and 3rd most frequent reasons for smoking. These results may be related to the age of the sample group that coincidences with acquiring friends, feeling of freedom and self-dependence that have a great effect on initiating smoking, also the nature of this job that allows group gathering has an effect.

In the current study, seven hundred sixty-nine soldiers (69.91%) preferred to smoke their first cigarette in the morning and this indicates the effect of the chemical dependence of nicotine. This result matched with that of Toljamo et al. [9] who found that (61%) out of 564 soldiers smokers had their first cigarette within the first hour after getting up of sleep.

In the current study, there was a statistically significant difference between soldiers who smoked more in the morning and those who smoked more in the rest of the day, as six hundred and nineteen soldiers (56.27%) smoked more during rest of the day and four hundred eighty-one soldiers (43.73%) smoked during morning, with more smoking during the rest of the day .The possible explanation of this result is that not all soldiers in Cairo Security Forces work in the morning, many have night duties with stresses and more group gathering.

In the current study, there was a significant statistical difference between soldiers who didn't accept smoking (91.45%) and those who accepted it as a bad habit (8.55%). This result shows the acceptance and awareness of smoking as a bad habit among soldiers even the current smokers. This result resembled that obtained by Hussain et al. [16] who studied the attitudes of 853 Nigerian soldiers towards smoking and found that most of them considered smoking as having harmful effect on health. This indicates that those soldiers are not fully aware of the consequences of smoking to the degree to try to quit it, although they acknowledge their awareness, but it insights us that they can be encouraged to quit if we make more efforts to make them aware of the full details of the consequences of smoking on health and family.

The current study shows that six hundred fifteen (55.91%) soldiers had moderate levels of craving to smoke, two hundred forty-three (22.09%) soldiers had low levels and two hundred forty-two (22%) soldiers had high craving levels. This result partially resembled the results of Melika et al. [5] who studied smoking habits among 100 doctors at Sohag Hospital, (32%) of the doctors had low levels of craving to smoke, (41%) had moderate levels and (27%) had high craving levels. The possible reason might be due to the effect of nicotine dependence with relatively short duration of smoking onset. This can encourage tobacco control programs to target this group before complete nicotine dependence and high craving levels become established, as this may lead to more success levels in quitting trials.

There was no significant difference between smoker soldiers who smoke if they were so ill that they were bed recumbent most of the day (48.09%) and those who didn't (51.91%). This might be due to nicotine dependence in the group that didn't stop smoking during illness, also it gives an idea about the other group that can be a good target for smoking cessation protocols because of their concern about their health.

In the present study, the main cause of soldiers to like smoking (55%) was to relieve tension. This result was in some agreement with those obtained by Owers & Ballard [17] who investigated the impact of Army life on soldiers' motivation for stopping smoking among 560 British soldier smokers and almost all of them reported that smoking was needed during the service for stress relief. This might be attributed to that soldiers could be subjected to difficult and dangerous jobs, exposure to trauma in combat and lengthy deployments necessitating separation from family and friends. In addition, service personnel are subjected to the ordinary stresses of handling interpersonal relationships with peers and authorities and managing workload [18].

The current study showed that there was no big difference between soldiers who kept smoking to avoid problems like getting irritable or gaining weight (51.91%), and who didn't (48.09%).These results resembled those found by Prochaska et al. [19] who conducted individual interviews with youth and clinicians recruited from outpatient mental health settings in the San Francisco Bay Area to identify contributing factors to tobacco use and strategies for intervention in this patient population among 132 youth between the age of 16–24 years.

In the current study, as regards the respiratory problems of smoking, expectoration was found in (96.9%), chest tightness in (33%); frequent coughing was found in (3.18%), shortness of breath in (1.54%), and chest wheezes in (0.54%). These results matched that of Barton et al. [20] who conducted a study to determine the prevalence of smoking, to identify the effects of deployment on smoking behavior and risk factors for smoking, and to determine the short-term health outcomes associated with 995 smokers in Australian Defense Force (ADF) personnel between 2003 and 2005.They stated that current smokers reported persistent cough, shortness of breath and wheezes compared to nonsmokers. Prochaska et al. [19] also found that the most common respiratory symptoms found in this age group were coughing in the form of expectoration & dry cough, fatigue and shortness of breath.

In addition, the most frequent non-respiratory encountered problems related to smoking were those related to gastrointestinal system; six hundred sixty-six (60.55%) soldiers complained from of heart burn & oral cavity problems. This result matched with that obtained by Hussain et al. [21] who found that (57.5%) of soldiers had dental problems. The same result was lower than that stated by Campus et al. [10] who studied if smoking increases the risk of dental caries among 763 participants at the Italian Military Academy and found that most smokers (84.1%) showed bad mouth odor, teeth discoloration, frequent gingivitis & caries. The reason for this may be possibly due to lack of awareness of oral hygiene.

The second most frequent non-respiratory symptoms were cardiac, in the form of palpitations (45%). This result resembled the result found by Hussain et al. [22] who studied a comparison of hubble-bubble and cigarette health effect among 525 young male college students in Kuwait, and found that 28% of cigarette smokers of college students complained of rapid heart rate.

Other non-respiratory symptoms found were vascular manifestations in one hundred fifty-six (14.18%) soldiers in the form of leg claudication. Vascular responsiveness to exercise may be impaired in smokers. On the same path, Gaenzer et al. [23] had noted impaired femoral vascular responsiveness during exercise in smokers compared to non-smokers by using by high-resolution ultrasound. Also, Heffernan et al. [24] examined the association between vascular endothelial function and exercise capacity in smokers and found that chronic smokers have lower exercise capacity and lower endothelium-dependent vasodilatation by high resolution ultrasonography compared to non-smokers .

In the present study, there was a highly statistically significant difference between soldiers who had continued smoking inspite of presence of serious illness, as only two soldiers (0.18%) who were already diagnosed as bronchial asthma, answered the question of: have you continued smoking inspite of presence of serious illness that deserves quitting smoking? (Yes), and one thousand ninety-nine soldiers (99.82%) answered with (no) to the question referring to they stopped smoking if had a serious illness and they didn't have any serious illness. Soldiers represent a large scale of youth who meet the conditions of compulsory recruitment in the Egyptian Army and Police Forces, which perform medical and

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physical tests to choose the best members of them for the army and then the rest of them will be converted to the Ministry of Internal Affairs, which also perform medical and physical tests.

In current study, there was a highly significant statistical difference between soldiers who give up activities because of smoking and soldiers who did not, and it showed that only five soldiers (0.45%) of the sample group gave up or greatly reduced an important activity in order to smoke, while one thousand ninety-five (99.55%) didn't. This result may be due to the young age group of the sample study with relatively short duration of smoking. May be by the age of 30, they will be complaining of disabling symptoms if they continued to smoke specially the heavy smokers, as smoking during adolescence is predictive of health problems at age of 30, including respiratory ailments, neurobehavioral and cognitive problems, and general malaise.

This current study showed that nine hundred ninety-eight (90.73%) of smoker soldiers had not advised others to quit smoking although most of them didn't accept smoking as a habit and only one hundred and two soldiers (9.27%) advised others to quit; this may make sense because the most common cause for initiation of smoking in this category and one of the common causes of not quitting is smoker friends. Similarly, Haas and Schaefer [25] found that friends generally have weaker effects for smoking cessation than initiation among adolescents and young adults.

In the current study, four hundred forty-one (40.09%) of currently smoker soldiers were seriously thinking about quitting smoking, three soldiers (0.27%) were probably thinking about quitting and six hundred fifty-six (59.64%) of soldiers were not thinking about quitting. Therefore, even with such a high rate of desire to quit, success rates are expected to be minimal in the absence of active anti-smoking programs, specialized cessation counseling, and support facilities. These findings were in accordance with results of Gierisch et al. [11] who studied tobacco use among 199 participants African Americans and veterans of active duty, and found that 70% soldiers wanted to quit. This might be due to the difference in the full awareness of the serious problems that may result from smoking between those young aged soldiers in Egypt and the soldiers who were the subject in the comparative research.

In the current study, there was a highly significant statistical difference between soldiers who had tried to quit smoking and those who hadn't, with higher frequency towards soldiers who hadn't tried to quit smoking {one thousand forty six soldiers (95.09%)}. This result differed from that obtained by Toljamo et al. [9] who studied nicotine dependence and unsuccessful attempts to quit smoking among 614 military recruits starting their military service in the Light Infantry Brigade and Lapland Antiaircraft Regiment, part of the Northern Command of the Finnish Defense Forces and found that (60%) of soldiers in Finland had tried to quit smoking. This difference might be due to the more advanced anti-tobacco campaigns that are directed towards smokers. This high percentage in our study may be due to young age with impulsive personality & denial of the dangerous risks that may affect them, and also may be due to group gathering encouraging each other to smoke & considering smoking as part of their life style. Such high percentage sets alarms about this neglected group.

The current study showed that soldiers who tried to quit smoking less than 3 times were (74.07%), soldiers tried 3 times or more were (25.93%). Likewise, Toljamo et al. [9] found that 60.4% tried less than 3 times and 39.6% of smokers who tried to quit had made at least three quit attempts. This indicates that despite the fact that serious attempts to stop smoking seems to fail in some cases, there are still many soldiers who try to give up their unhealthy habit.

In the current study, smoker soldiers who had tried to quit with the longest stop duration equal or more than one month were thirty-seven soldiers (68.52%), while those with a duration with less than one month were seventeen (31.48%) of the soldiers population who tried to quit. This result came in agreement with Bancej et al. [26] who studied smoking cessation attempts among 1000 adolescent smokers and found that the prevalence of relapse within 1 week to 1 month after stoppage of smoking; that means in another words stop duration less than one month; was 34% and 66% for more than one month smoking. This might be due to the awareness of soldiers of this group about health hazards of smoking.

In the current study, forty-eight (88.89%) of soldiers who tried to quit smoking found that it was difficult to quit. This result came in agreement with results of Owers and Ballard [17] who used a questionnaire to identify smokers in a British Army infantry battalion of 560 soldiers, based in the United Kingdom with either a low or high intention to quit smoking and found that most soldiers found it difficult to quit. This might be the responsibility of social and community networks, living conditions and cultural and socioeconomic factors including: smoking for stress management; enjoyment of smoking; addiction to nicotine; habit; social acceptability of smoking; lack of support to quit and access to quit resources; boredom; stressful life factors; pro-smoking living environments; cultural norms; and socioeconomic disadvantage. Stress management, lack of support from health professionals and other service providers and the high prevalence and acceptability of smoking are same factors stated by Twyman et al. [27].

Thirty-three (61.11%)of soldiers of the group who tried to quit smoking last tried to quit smoking for or more than one year (they represented 3% of the whole sample group), while twenty-one soldiers (38.89%) of those who tried to quit, were for less than a year (they represented 1.9% of the whole sample group). Center for Disease Control and Prevention, 2010, found that 51% of high school smokers reported a quit attempt in the past year. This high percentage compared to the low percentage among soldiers infers that, inspite of the same age group, the difference in education and awareness plays a role in trying to quit smoking, as suggested by Barton et al. [20] who stated that the prevalence of current smoking was highest in those who had completed less formal education and those who served in the Navy, with no attempts to quit.

In the current study, causes that led smokers to quit smoking were improving health in forty-six soldiers (85.18%), the cost in thirty-three soldiers (61.1%), children health in ten soldiers (18.51%) and social pressures in one soldier (1.85%). These results indicate that the real awareness of health hazards of smoking among Egyptian soldiers is not satisfactory; as this percentage represents the fraction of sample who really tried to quit not the whole sample. If Tobacco control programs made more efforts warning soldiers of the health consequences of smoking and if the country increases taxes on cigarettes, we will have satisfactory results in tobacco control in this category of the society. These results were in agreement with that of Ling and Glantz [28] who found that about 88% of quitters stated they quit for health reasons, because of concern for the health of people around them, price reasons, or because of a desire to be more physically fit. Also, Gierisch et al. [11] found that most soldiers expressed desires to stop using tobacco for improving personal health as a major reason, Family and children protection from smoking hazards and habit also served as a reason for many young soldiers to become committed nonsmokers. Soldiers cited the cost of cigarettes and shifting social norms on smoking as strong environmental reasons to become nonsmokers. Social pressure to become a nonsmoker seemed also to be a cause to stop smoking.

Among fifty-four soldiers who tried to quit smoking, twenty-three (42.59%)of them had not received any support,sixteen soldiers (29.63%) received moderate level of support, lots of positive support in eight soldiers (14.81%) and minimal support in seven (12.96%) soldiers (all of them could quit smoking). This result matched that found by Thabane and COPD Working Group [29] who studied smoking cessation in 8921 patients with chronic

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obstructive pulmonary disease, and found that smokers who couldn't quit had not received any social support, such as from family and friends.

In the current study, problems occurred during smoking quitting in first or second day were craving in fifty soldiers (92.59%), headache in forty-eight soldiers (88.89%), irritability in forty-four soldiers (81.48%), palpitations in forty (74.07%), trouble in concentration in thirty-one soldiers (57.41%), drowsiness in twenty-nine (53.7%), stomach upset in seven soldiers (12.96%), hand tremors in three soldiers (5.56%) and weight gain in two (3.7%). These abstinence-associated symptoms are primary indicators of physical dependence to nicotine. This matched with results obtained by Gierisch et al. [11] in which soldiers reported feelings of depression, irritability, uncontrolled anger, and sleeplessness that made smoking cessation difficult but did not categorized the degree of craving in that study.

In the current study, thirty-six (66.67%) of the soldiers who had tried to quit (representing 6.07% of the total sample) found that they could quit, while eighteen (33.33%) soldiers (representing 3.03% of the total sample) of those who tried to quit couldn't quit. These results were more encouraging than those obtained by Zhu et al. [30] who studied predictors of smoking cessation among 633 adolescent smokers aged 12–19 years and found that only about 4% of this age group succeeded in quitting. This may indicate that although the quitting trials were in small group, soldiers who took that decision intended to and had the will power to do that, may be because they were aware about the problems smoking can cause to their life.

In the current study, forty-two soldiers (77.78%) of the current smokers hated to give up their first cigarette in the morning and this result resembled with Melika et al. [5] who found that (40.23%) of the sample group hated more to give up their first cigarette, which may be due to the dependence on nicotine.

In the current study, the commonest cause of resuming smoking was craving cigarettes in thirty-three soldiers (61.11%), followed by stress/tension among twenty-one soldiers (38.89%), then habit/ activity among eighteen soldiers (33.33%), friends or social pressure among thirteen soldiers (24.07%). These results were slightly different from those obtained by Gierisch et al. [11] in which soldiers stated that they resumed smoking to modulate depressed mood, anxiety, and boring after returning home. This difference might be because of the different demographic pattern of the studied groups. Being around friends and family who used tobacco, was a commonly cited barrier to smoking cessation. Others said it was difficult to break the habit because smoking was linked to so many of their other life activities, such as driving, eating, feelings of depression, irritability, uncontrolled anger and sleeplessness, which made smoking cessation difficult.

Finally, the difference between soldiers who preferred cigarettes plain packs (95.73%) and those who preferred pictured packs (4.27%) was statistically highly significant. This raises the alarm that young age and low social level are associated with wishes to deny the alarming of the facts of the harmful effect of smoking. This indicates that more effort must be done by the government to improve the effectiveness of the health warning. This can be achieved by modifying the way in which the warning was written by using colors, pictures and drawings to illustrate the dangers of smoking in an effective manner in a way occupies 50% of the outer surface of the cigarette package on both sides, in addition to a small pamphlet inside the package also dealing with smoking hazards.

In the study group, seven hundred eighty-nine (71.73%) of smoker soldiers spent 5–10 L.E. per day to smoke, two hundred thirty-eight (21.64%) of smoker soldiers spent less than 5 L.E. and seventy-three (6.64%) of smoker soldiers spent > 10 L.E. per day on smoking. This is considered a high financial burden in relation to their modest salary.

In the current study, we performed X-rays for smokers who had symptoms other than expectorations, no abnormality was detected in 81.03% of X-rays done and X-rays with increased bronchovascular markings were found positive in 18.97%. These results might be attributed to the young age of the soldiers, with relatively short duration of smoking in comparison with other studies with more significant values that were conducted on older age groups, like that of Kirchner et al. [4] who studied the correlation between chest radiography and tobacco burden among 83 participants and found that (74%) of the smokers showed an increase in overall lung markings on chest radiography; there was a significant positive linear correlation between the increase of overall lung markings on chest radiography and the cigarette consumption quantified as pack years.

Conclusions

Cigarette smoking is a common habit among soldiers and it starts in a relatively young age mainly due to social influence. Respiratory and gastrointestinal symptoms are the most frequent encountered complaints among soldiers. Main causes that led them to try quitting were health concerns and financial issues; as most of them spend a considerable percentage of their monthly income to obtain cigarettes. Unfortunately there was no organized positive support to help the quitters.

Recommendations

1. More efforts should be exerted to improve the awareness of smoking hazards among low social and intellectual population.
2. Organized Quitting programs should be available specially in gathering places like universities, soldier's camps, prisons, etc.
3. More smoke-free areas should be encourage and spread.
4. More taxes should be imposed on cigarettes.
5. Laws should be strongly enforced to prohibit selling cigarettes to young aged people.

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